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Acoustical Absorbing Architectural Coating and Process

Abstract

A process for dampening sound and a material for effecting that process have been developed. The process involves applying multiple layers of a coating that then transmits that sound into very small cavities. These cavities perform several functions, they further transmit the sound, they absorb some of the sound through the random cancellation of reflecting waves, and they contain sound attenuation media such as closed cell cavities and projection particles. The projection particles act in at least two ways, they perform a baffling function, and they act as sympathetic resonators. The material which has been developed to effect this process consists of a lattice structure with vacant and non vacant cavities. The non-vacant cavities contain structures and mechanisms for altering, redirecting, reflecting, and absorbing the incident acoustical waves. The invention may be extended to hot gas environments and electrically and thermally conductive surface coating applications.